BYTE BACK

"ByteBack"

ISSUE 5 • 1994

80p

HAPPY NEW YEAR!

INTER-WORD

LOST THE MANUAL? THIS'LL HELP

CHEAP PRINTERS

SECOND INSTALLMENT: USING PRINTERS WITH THE BEEB

INTER-BASE TUTORIAL

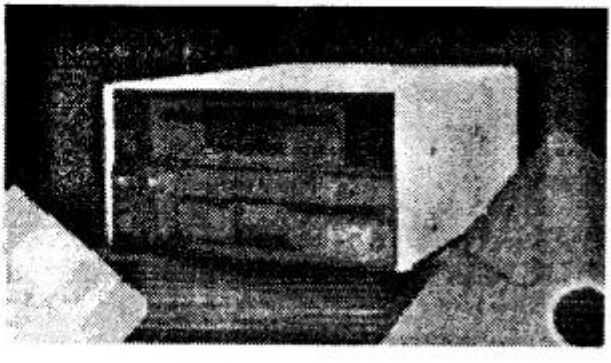
PART FOUR-HUNDRED, AND AT LAST THE FINALE!

ADDOS FOR THE MASTER

AN ALTERNATIVE DISC OPERATING SYSTEM

PLUS

- *Classified ads*
- *Your letters*
- *Suppliers*
- *Tips*



A DIFFERENT WAY OF LOOKING AT YOUR BBC MICRO

Hey, it's my space!
editorial

Hello once again. Welcome to ByteBack Issue Five. Changes for this issue include the addition of 4 more pages! Well, you can think of it as a *late* Christmas present if you wish. This is not to say that every issue will include these additional pages: that all depends on the time I have to put each issue together and, of course, on the amount of reader's articles I have to fill the extra pages – get busy out there!

My thanks to those of you who have written to me concerning last issue's mention of the 'MicroMart' situation. It is possible to advertise so-called clubs like ByteBack in their magazine if the space is paid for: free-ads are for private sales only, that means people selling their old junk and attic space-takers. I will endeavour to peruse the situation more thoroughly in the coming new year, with intention to purchase some of this advertising space.

At present each issue of BB is printed out on my laser printer. This keeps the quality high and the cost low. It is also convenient as I have a laser printer but not a photo-copier. When (not 'if': it's completely possible) the number of subscribers far exceeds the present 35 or so, printing from the laser will not be a feasible option as it is slow (a maximum average of 5 pages a minute) and so, ties the printer up for far too long during time when it could (and has to) be put to better use printing pages with respect to my bread-winning work. I have negotiated a price for photocopying (mother-in-law's new Canon photocopier!) at a rate of 4p per copy and this will have to be the option to take. There is already enough time and work involved in putting each issue together without the time and hassle of feeding 200 pages of paper into the laser manually (my printer needs servicing so this is the only way I can do double-sided printing at the moment!) To be able to pass this stage on to a sparkling new and completely competent photocopier would ease my burden no end. With this stage well and truly out of my hands, it gives me more time to deal with all the letters I receive in respect of this magazine. I enjoy reading them, just can't find the time to reply as quickly as I would like to.

So, to sum up, although I haven't been avidly seeking to grow the existing BB subscriber base, I intend to do so after this December's festivities are all over and the last of the turkey sandwiches have been eaten, which is normally well into the spring in my family...

Having received a variety of letters on 'basic' subjects about the BBC, namely installing sideways ROMs and using them, transferring files from cassette to recently purchased discs and so on, whilst replying to the questioning people one-on-one I think it will be helpful to include some of the details in ByteBack.The 'basic' exercise are what many of you are just coming to understand, being proud new owners of a BBC micro. The details of any of these exercises will remain in personal letter domain: a general overview will be what ByteBack will cover. If you have any queries regarding the use of the BBC and it's peripherals, please write to me. I obviously don't deal with every item myself (hey, I'm no BBC expert!), but I do have a good 'expert' team behind me, a number of people willing to spend time dealing with whatever problems you may have, particularly my good friend Tim Parsons, with whom I happened to become acquainted through setting up ByteBack. Whilst I don't promise that writing to us will produce desired results, it's better than stuffing a hand-written note in a bottle and tossing it out to sea! whilst I'm on the subject of name-dropping, I am taking this liberty to mention two other very special people who have supported me from the beginning and who continually provide encouragement, articles and amusing correspondence. I am talking about messrs Frank Jones and Martin Pickering. Martin you will know of, through

Editorial *cont...*

his provision of the recent (concluding in this issue) article of INTER-BASE: Frank has provided an article or two for ByteBack: his support has been mainly on the private, letter writing side, providing me with a page by page breakdown of each issue of BB, donating discs, programs, life-stories and the like. Between these three I have mentioned, I have the team I need to keep me going when I get the "Oh no, it's not time for another issue of the magazine to go out is it?" blues! Thanks guys I also want to recognise (it's like te Academy Awards init?) the recent new additions to the BB clan, the ones who have written continually and have made my BBC life more interesting.

As I have partially mentioned in the past, my intention for ByteBack is to be a taster, something to look forward to, a forum for BBC users everywhere to "get together" and share their interests. For some the BBC is but a useful, interesting piece of technology to amuse, for others it is a valuable tool and 'friend' for embracing letters, organised files, games. I hope that through these few pages, I am able to represent every aspect of the Micro's users and interests. If something is missing, I'll include it. Thank you to everyone who returned the issue three questionnaire (if you didn't, you'll start to feel a funny sensation in your stomach: to relieve the guilt, fill in the aforementioned form and post it to me or write if you haven't got one and I'll ship it to you!) I have received 21 replies. From this information I will endeavour to tailor ByteBack to meet your requirements. As soon as I have a chance to put the figures into an order I will report the results to you (perhaps INTER-BASE could help me there...I must read this issue's article!)

The winner of last issue's "guess the cover colour" will be announced in the next issue.

Please ignore last issue's statement that referred to this as being the "Christmas Issue" – unfortunately Christmas arrived too early for my liking and caught me somewhat unawares...

I have been asked to give out the date when the proceeding issue of ByteBack will be distributed. Well, I've considered this in the past. For a commercial, over-the-counter magazine I would have to provide this information if I hoped to keep my subscribers. ByteBack, however, is nothing more than a 'hobby': I enjoy the time I spend putting the magazine together, reading and replying to the letters I receive, and playing with the various discs I get, but *it is not my job!* Believe it or not, I actually have a full-time job that is supporting me; it's not ByteBack that pays the bills. I mention all of this because I have received a couple of queries, misunderstandings if you will, where people have thought that ByteBack is a commercial venture and I run some sort of BBC shop or something. I don't! I will continue to run BB as long as I can, as long as I enjoy it, as long as there is demand for it, whatever. The future is not set and I don't know how it's going to go over the next year, we shall have to see...

Acorn User has now moved to Macclesfield and is owned by Europress. Mark Moxon, Technical Editor, explained that 'those concerned' have decided to allow all of the 5¼" subscription discs that were given away with Acorn User over the last ten years or so to be released into the Public Domain. Although Acorn User aren't releasing the discs themselves (they don't have the whole set anymore!), anybody who has any of the 5¼" subscription discs should contact one or more of the BBC Public Domain libraries there are (details on page 18) with a view to sending them a copy of the discs. This does not apply to the 3½" subscription discs: the rights to these remain with Redwood Publishing.

Paul

Excuse me, did I hear somebody cry...

Help!

If you have a query, this is the forum that is dedicated to you!

I don't profess to know all the answers! I do however have a number of good friends and knowledgeable people who read this (yes, that's you!) and the answers I don't give completely here (plus any mistakes I make) will hopefully be corrected by you! If you think you can help to answer any queries here, please let me know and I'll print your solutions next issue.

First up, a letter from Jim Burnett of Winton Eccles, Lancashire:

***Q** HELP! As a newcomer to me world of BBC computing - I bought a second hand Master series computer without manuals etc so I am looking for advice on the following:*

When using the VIDEO OUT to my video recorder I van only get a black/white recording. Also I have a BT MP182 printer without the manual and when trying to do a screen dump using CTRL-P it copies one line then leaves a gap of one line before copying the next, and so on. Also, does anyone know what the various DIP switches do?

A As far as the VIDEO OUT connector is concerned, it is designed to be only Black and White output. The standard TV output gives a signal including colour to be connected to a standard TV. The VIDEO OUT socket is designed to be connected to a monitor that can support it. Why is it Black and White only? If you have ever plugged your BBC into the TV using the standard UHF and turned the colour down on the television, you'll no doubt notice a slight (major?) improvement on the quality of the picture, particularly if you are using the Beeb for intensive text-based work like word processing. With any computer that uses a standard modulator output to a standard TV UHF input, you get only a 'reasonable' colour picture, perfectly clear enough for the average game or program listing, but not really clear enough for 80-column mode activity like mode 0 or 3 word processing. In addition to this, when the BBC is transmitting a colour signal to the TV, you get symptoms of "colour crawl", where the colours seems to be 'moving' on the screen. I guess the theory behind the VIDEO OUT socket was to feed as clear a picture as possible (by removing the colour option) to a VIDEO IN socket on a TV, by-passing the modulator in the BBC and some circuitry in the television, and giving a clear picture for text-based BBC activity. Let's face it, when was the last time you needed to see your "letter to Aunt Agness" in colour? Very rare I would imagine.

On the BBC model B, you can make the VIDEO OUT socket present colour to the TV by making the link across S39 (situated on the BBC motherboard right next to the VIDEO OUT socket: I don't know how this can be done on the Master). Having made this modification (I have fitted a switch across this link to facilitate colour on games whenever I play them!) you will get a picture which more approaches the output from the TV UHF socket, definitely degraded in my opinion. If you want colour output, I suggest using the standard UHF output as the improvement would be minimal.

To your second question regarding the printer. The reason you are getting a blank line between each line is because when the printer receives a 'Carriage Return' instruction from the BBC at the end of each line, the printer is translating the CR command into CR with 'Line Feed' (CR/LF), adding an additional line feed for each line. This is a setting that can be altered in software if you are running a word processor for example, but in your case it is more likely a job for altering the printer's DIP switches from their current default position. Unfortunately I can't help you there as I don't know anything about the MP 182 DIP switches. Can anyone else help with printer information?

the ByteBack postbag...

your letters

I finally received this months copy of ByteBack, what a sound little tomb it is becoming. I really like the addition of the competition with a prize of such outstanding relevance (creep creep). **[proceeds to give entry to competition...crawling will get you nowhere! Ed's note]**. I'm glad that the number of subscribers is rising and that the magazine could be with us for a long time. The likes of me needs something to guide us through the maze of technical information that is a necessary part of modern life, it was so much easier with the two cans and a piece of string, how about a more basic type of question that would entertain and maybe educate some of us dolts out here in the real world? I'll start off with a simple question that maybe your readers would like to ponder of; what makes flashing xmas tree lights flash? As far as I can tell it's something to do with one of the lights itself, anyone know for certain? And could it be the smallest computer in existence? Must go, the kids want their computer back to play 'Painter' on.

Pat Wren, Hucknall, Nottinghamshire

I am glad you gave my last letter your immediate attention and forwarded a copy of ByteBack; I honestly thought the latest copy had gone adrift. Of course, I could do without it despite the withdrawal symptoms that manifested every time the Postman staggered down the drive and failed to deliver the one envelope I was looking for. I shall be quite stoic next time as the days go by, growing in number as ByteBack fails to make an appearance, refusing to put my anxieties on paper. When is it due, give us a clue?

I am glad that the Electron started my return to the 8 bit world and that I have put together for £30.50, as I remember it, a machine that gave me a lot of fun, interest, headaches and hooked me into the computer world; also that on the trail of Electron bits and pieces, I plunged for the Beeb. Whilst the Electron will be cherished and the PC used, the Beeb will be my workhorse, providing I am sure lots of fun and interest for the years to come. Of BB, someday I will find the time to type in these interesting programs that some poor soul has bashed his brains out producing. I have never been into graphics or sound, the former because of it's mathematical element - though this program removes that with the use of the cursor, and the latter because I am tone deaf... though my grandchildren and I enjoyed singing carols featured on the latest 8-Bit Software disc. How are you going to get your circulation list to grow if you cannot advertise? I feel a bit concerned for the future. Unless, one has one's claws into a subscriber by the way of a Bankers' Order, the trouble of sending the sub on renewal and if one month goes by the individual realises he or she can live without it, another member is lost. I do what I can for ByteBack in my limited circle... your mags have even been to Billingham and there is one in Germany... Incidently I have allowed my 'Computer Shopper' sub to lapse after 3 years and I have had two 'phone calls asking me why and would I reconsider.

Frank Jones, Thirsk, North Yorkshire

Many thanks for the issues of BB, it's rather annoying to hear of MicroMart's decision to stop your ads - I'll certainly drop a line to the E. I can't think of any other places you could advertise apart from Acorn Computing, who still offer a little support to the Beeb. I have been trying to log onto a number of bulletin boards recently, trying numbers from rather outdated lists. Most of the numbers I've got either no longer exist or support 'terminal' comms only. I have only a Viewdata modem (V23v) so I've been unable to use these. Would you consider including a 'Comms list' on the back page of ByteBack? If so, here's a (rather brief) list of Viewdata BBS's that are Definitely still operating and still supporting the Beeb. There are probably many more; other readers

Letters *cont...*

may know of other boards that are still around...
Simon Godfrey, Ealing, London

Backpage I didn't, but here is your list in all it's glory. Acorn Computing? I didn't know they still provided any support for the 8-bit Acorns. Acorn User has now become Archimedes exclusively so no support there, except for the fact that they have made their collection of 5¼" magazine discs Public Domain (see page 1 for more details)...

Cellar:.....**0782-551015**
E-mail, Ample, Joel's Ample, CUGs
CC14:.....**0482-798249**
E-mail, Ample, Completely Hatstand, worth a look! Incl. Musictel2 BBss 'frozen in ice'
Challenger:.....**021-445 3913**
E-mail, Telesoftware, Ample, CUGs
Darkhaven:.....**0604-413716**
E-mail, Sci-fi/Fantasy, a comms castle
DCT2 (messaging/info):.....**0483-238073**
DCT1 (Ample database):.....**0384-239944**
100s of Ample files, a list is available on each system
Healthdata:.....**081-986 4360**
Health database
TAS: 0372-743809
E-mail, Graphics/Demos, Ample, Telesoftware, CUGs, SIGs
Test BBS (ringback):.....**0273-888704**
New board

Martin Pickering (Synectics) kindly mentioned ByteBack to me. How long has it been going and are back copies available? I have been a BBC user from the start, but I have only recently been able to enjoy it's full potential, as I have been purchasing software and hardware which former users are selling off at a price I can now afford! I have 40/80tk drives and 32k shadow RAM. Most of the books which I have were obtained from library sales, car boot sales and charity shops and I now have some duplicates.

I am looking our for another 32k shadow RAM for a second BBC which my wife uses for word processing. If you know of one for sale, I would appreciate your asking them to contact me. Are adverts included in ByteBack?

I wish every success with ByteBack, especially with the forthcoming demise of BEEBUG, of which I have been a subscriber from number one. Do you know how many issues of 'Laserbug' were issued? I have four and would like to obtain any others.
Mike Olive, Worting, Basingstoke

I have now fitted a 32k Shadow RAM for my INTER-WORD chip and the Watford DDFS kit with motherboard that I ordered recently from Watford Electronics. Unfortunately Watford have yet to deliver the disc drive unit so that I am unable to test the circuits. (I arranged for my nephew to come down from London and fit these components, I realised that it was entirely out of my capability). I am annoyed with Watford for selling me the DDFS kit without dispatching the disc drive and to date I have rung them three times without any success. I cannot get any possible delivery date from them and I feel that they seem uninterested in the delivery of the disc drive unit. I have found that on other matters that I have spoken to them, they have been very helpful.

The INTER-WORD with the 32k RAM has really opened up my BBC for me and I am looking forward to the time when I can switch to Disc from Tape. I do regret not keeping up with the advancement in the past although I did not seem to need any more facilities than I already had, but how wrong can you be?!
B Baker, Raymonds Hill, Axminster

Because the BBC is now old technology, people who sell off bits second-hand don't expect to get much for them: plenty of bargains are there to be snatched up by anyone looking for them. I have received reports of BBC's going for £10 at car-boot sales! it isn't necessary to buy most parts brand new, unless you need them immediately. My advice to anyone interested in expanding your system is to keep an eye on the Classifieds page in BB, purchase the occasional copy of MicroMart and visit car-boot sales. Considering a replacement power supply for the BBC can cost £60, a complete BBC for less than this must surely represent a bargain...

Letters *cont...*

Many thanks for entering my Wanted ad. I had a response from somebody who made an offer of the Omni-Reader to me. Apparently this is the only product which was marketed several years ago, which can have a stab at optical reading with the Beeb. Firm went bust as it cost £450. I got one plus a spare as was offered at an auction which the seller attended. It's hard work teaching it to recognise the various fonts which are used by people sending me lists of names etc. It carries in it's memory another 4 fonts but these are really suitable for documents and newspapers. Still it is the only thing on offer so we'll give it a go.

I got INTER-CHART and INTER-SHEET second-hand, no handbooks, so have put an advert for same in MicroMart. Don't really take to either on first acquaintance! Think it a shame, their not allowing your insert, what harm does it do? I wrote and said they should consider the interests of small groups and help to foster, not suppress them. I can't see how your ByteBack advert could affect any other persons and considering the blatant trade adverts masquerading as private trade in their paper, it's plain stupid.

Had a funny experience with one of their adverts. Ordered what appeared to be a cheap colour monitor which the Parcel Force 'delivered' by leaving it on the doorstep and that on the main A40 Trunk Road! When I went out to pick it up, all I heard was crashing of broken glass. Either PF drop-kicked it or it was a dud to start. Still trying to get a refund from seller who's saying nothing doing until he gets refund from PF. Too far away to visit worse luck.

Been given an HP Think Jet with two new cartridges, owner wants me to flog it. No use here as it won't respond to Epson codes and is very hard to get to respond to my HP coding. What's it worth? In perfect condition & with handbook.

Terry Heath, Cheltenham, Gloucester

WANTED: your knowledge.

***Norma Lee from Bishop Auckland in County Durham** needs some answers. I would like to throw this open to you, the readers, to hopefully come up with the solutions. Amongst you there is a wealth of information that somebody else would greatly benefit from. Would you put pen to paper and help?*

I purchased my micro about four months ago, mainly for use as a word processor, reproducing the same CV on a typewriter became very boring. But I would like to become a little more proficient in using the other features of the machine. My previous computing experience, as an industrial chemist (now retired), was based solely on the Digital RSX-11M system so I'm very much the novice when it comes to the Beeb.

I find one problem is that although I can write the BASIC program (very basic) to produce graphic characters I cannot fathom out the graphic and download commands for my printer in order to get a hard copy. Do I need to buy a Printer Driver Generator? Dot graphics is another complete mystery. One thing is, when I want to print quadruple sized characters I cannot just embed the ASCII code in the BASIC program I have to go into the EDITOR and use the special printing code .oc.

CAN ANYONE HELP?

I would also like to know more about expanding my basic system as I am not hardware literate and I really need advice before spending money. For example, according to the Welcome Guide my machine can have up to 16*16K pages of sideways ROM/RAM with 4 pages RAM and 7 pages of ROM already fitted but how do I tell if this is correct, and how do I use them?

BBC Master (ADFS disc system)
Cumana 40/80tk disc drive
Star LC-10 Printer

An alternative DFS system

BBC Master

BYTE BACK

ADDOS - an alternative Disc Filing System for the BBC Master

by Andrew Donald

On acquiring a BBC Master about a year ago, I was very impressed, with one area of exception - the disc filing system.

The Beeb's disc filing systems have always been a little less than perfect in the standard machines. It was noticeable how outside suppliers hurried to provide alternative systems. The Master is better than most in that it has two disc filing systems available; the single density DFS and the double density ADFS. The restriction from my point of view was that for my particular application I needed to be able to store 720k on a standard, 80 track, double sided disc. Almost every system that uses double sided discs in double density stores 720k, but for some reason the Acorn ADFS limits the maximum capacity to 640k.

It was very necessary to me to get the extra storage and I debated long and hard about the best way to achieve it. I seemed to have three possibilities. The first was to format 18 double density sectors per track, let the ADFS use the first 16 disc sectors and I would then have to access the others directly with a sector read/write routine. It would need a sort of spurious filing system. I knew that this was likely to be a bit of a hash; one of those programs that it becomes very easy to forget exactly what is going on and why. Pick up the disc after a month away and you wonder what it was all about.

A more appealing possibility was to dig about in the Acorn ADFS and see if it was possible to make the system handle more sectors. The ADFS stores 16, 256 byte sectors per track, it sounds a reasonable proposition to just increase this number to the more normal 18. This would put the total capacity up to 720k from 640k. The question in my mind was, "If it was that easy , why hadn't Acorn already done it?" My suspicion is that probably because it is more trouble to implement than it is worth. It is significant that 16 sectors may be numbered with just 4 bits, 0-F hexadecimal. The probability is that there is insufficient space allowed in the directory tables and in the general directory book-keeping for more than 4 bits for the sector number. If this was the case, trying to increase the number would be a nightmare.

The third possibility was to try converting the single density DFS into a double density system. This began to seem to be a distinct possibility when I found that the Floppy Disc Controller chip was the 1770. This chip is switched in and out of single and double density mode just by setting or resetting one bit in one register. Could I possibly just alter that and have a double density system? Well, in practice there was a little more to it than that, but it all turned out to be a lot easier than I was expecting and I ended up with a third DFS which fulfiled my requirements and with which I have been perfectly happy ever since. What follows will describe the program which I produced to convert the standard DFS into a new version which I call ADDOS. ADDOS may be interpreted either as Andrew Donald's Disc Operating System or as A Double Density Operating System, take your choice.

The program is not very long; about 80 lines of mixed Basic and assembler. I wish to deal with it in parts because there are interesting insights to be learned about the filing system through the program and I am sure that a number of people will find those insights useful.

For others, not too interested in the "whys and wherefores" of the program, let me say that I shall be making the complete filing system

Continued on page 13

Application Help-line...

INTER-WORD

As promised, basic information on using this great Word-Processor

If you are one of those who managed to get hold of a BBC second-hand, you probably got a lot of extra software along with it, much of it without operating instructions in the form of some sort of the manual. While I can't promise this section of ByteBack will provide all of the information normally included with a new purchase, some elementary instuctions will be given – hopefully enough to allow you to get started with the application in question.

I have picked INTER-WORD as first choice because it is arguably the best word-processor available for the BBC (*still* available: see page 17) and because word-processing is something the Beeb is good at and most people do it. On page 10 you will find a function key strip for INTER-WORD similar to the one normally supplied with the software from new. Cut it out, slip it under the plastic perspex above the red function keys and you're ready to go (provided you have the INTER-WORD eprom fitted in your BBC that is).

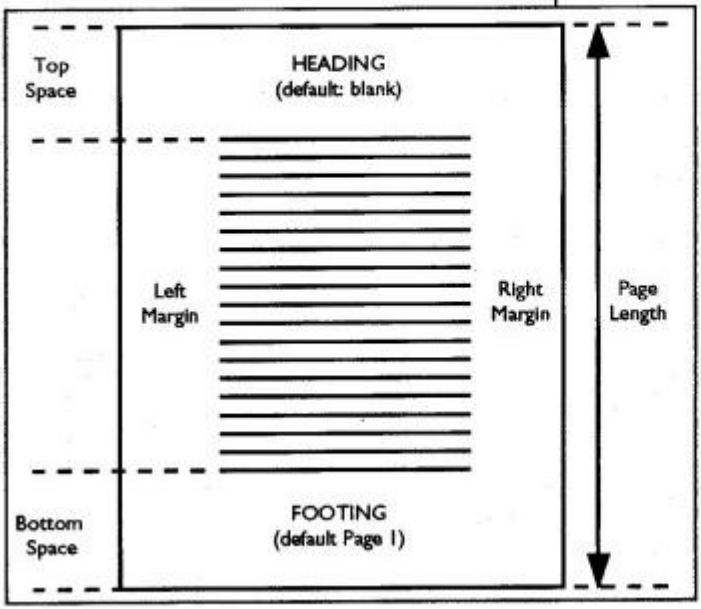
START HERE

To enter INTER-WORD, from the normal BBC prompt type

```
*IW. <RETURN>
```

You should now be presented with the IW Main Menu (users of Wordwise or Wordwise Plus, two earlier WP's also from Computer Concepts, should instantly recognise the similarities with the look of the Main Menu). From here you will make your choices as to what you will do with IW, save the newly-formed document, load an existing document, save a section of a document, load additional text into an existing document in memory, print the document or SPOOL the document.

To begin with, we will assume that no IW documents already exist and we are going to create one. To enter the word-processing mode, press `Escape`. You should be confronted with a display comprising a Ruler Bar near the top of the screen and the rest of the screen shaded with diagonal lines. Between these two 'islands' sits a lonely flashing cursor: this is where your document will start. As you type, additional lines will be added to your document automatically, either when your text reaches the right-most edge of the screen or when you press the `Return` key.



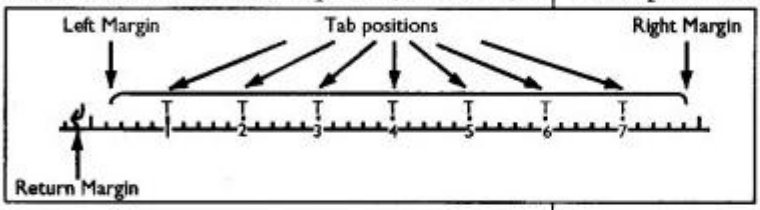
PAGE LAYOUT

Before we continue, it is important to know how a document is set up in IW. Looking at the diagram left, you will see that surrounding the text area of every page are various settings, all of which can be modified in some way or another. The settings that exist as default every time you enter IW are sufficient for us to use for now: We will deal with how to alter these settings as we continue.

INTER-WORD tutorial continued

THE RULER

Along with the page layout, there is the aforementioned Ruler Bar to consider also. Although it occupies two lines of text on the screen it is not present when the document is printed out. A ruler defines the format of the text following it; it does not affect any text preceding it and an additional Ruler can be inserted into the document wherever a different format is required (See below).



The default Ruler provides a left and right margin of 5 characters each side of the page, leaving 70 characters for the width of the text lines (by default the screen display is 80 character mode, which can be changed if required).

Default Tab positions are set at 10-character intervals. This means that whenever the Tab key is pressed, the text position will jump 10 characters across the page. To alter any of these Tab

positions, move the cursor using the cursor keys over the one to change then, while holding down the Shift key, use the left or right cursor keys to move the Tab to it's new position. To delete a Tab from the Ruler, place the cursor on it and press Delete. The same goes for the left and right margins of the page. Move the cursor over the margin to move then hold Shift down and press the left or right cursor to move the margin.

It's not necessary to press Return at the end of each line as the word-processor will carry over any words to the next line if they won't fit on the previous one. Normally a Return is used between different paragraphs and it's usual to add an additional blank line to separate the paragraphs too. If you want an indent on the first line of your paragraph, that is where the Return margin comes in (see Ruler). When Return is pressed in your document, the next line will begin at the position dictated to by the Return margin setting on the Ruler. This can be altered in the same way as the Tabs: further to the right of the Left margin for an indent on the first line, or further to the left of the Left margin for a 'hanging indent', where the first line starts further to the left than the rest of the paragraph. To remove a Ruler from the document, the easiest way is to move the cursor onto it and press Ctrl-L (delete line).

SAVING YOUR WORK

Now you've typed in your first masterpiece and you'll want to save it (good advice is to save it as you go along, say every 2-3 paragraphs or so). Pressing Escape will return you to the Main Menu, with your document still in memory. As this is the first time you will be saving the document, you will have to give it a name. The usual BBC file-name rules apply: the document name can contain 7 characters, preceded by a single letter (separated by a full-stop) for the directory it will be entered into if required. I keep my letters in different directories dependent in which month the letter was written, ie J.Fred is Fred's letter in June. A letter to Fred in May would be called M.Fred. The difficulty arises when you come to July! (In this case, I used a lower-case j). Goodness knows what I'm going to do in January...

Select Save from the Main Menu (option 1) and a window will open displaying the contents of the disc sitting in your disc drive (you do have a disc in there don't you?!) From this you will see any existing documents you have already created and saved to the disc. Enter a filename and press Return to save your new document. Tape users can also save and load files with IW, but

INTER-WORD tutorial continued

not as comprehensively as disc users. At this point, you can return to the document to, make any alterations, by pressing Escape.

Although there isn't a direct command that clears the existing document to start a fresh one, there are two basic options:

◆ While displaying the document on the screen, Ctrl-X marks the entire text and f8 then clears all marked text. This has the advantage that any margin and tab settings you set for the previous document are not lost for this new document.

◆ While displaying the Main Menu, typing
:KILL <Return>
will reset IW completely, as though you had just entered it. This will clear all document settings you have set up and return the package to it's default state.

To exit from IW, display the Main Menu. From here, any 'star' command can be entered, such as *DIR or *FX... To leave IW, enter
*BASIC <Return> or *B. <Return>
This will return you to BASIC.

MENUS

There are ten menus included within IW, each of which can be accessed by pressing Ctrl and f0-f9, listed below. Pressing f0 brings up the Status Menu, which gives access to all the others as well. Negotiating these menus involves the use of the up and down cursor keys to pick the required selection, then using left and right cursor keys to move through the available options. In some cases, strings of numbers or characters need to be entered; enter the details as normal using the whole keyboard. If a value is entered that is not within specified limits, it will be substituted for the nearest available choice when you move to another menu option. Pressing Escape at any time will return you to the document, closing the menu and its new set figures.

Unless your BBC is also fitted with a Shadow Ram board, your document will have to fit into the Beeb's standard 32k memory space. With the display in 80 or 106 column mode, at least 16k is taken up. When working in 40 or 53 column mode (sideways scrolling of the screen is required), a minimum or 8k is used. So, although the 80-column mode gives the most accurate screen representation of what will be seen on the printer (and the most effective mode to be working in), non-Shadow Ram users will be limited in the size of document file that can be created. The screen mode can be set in the Preferences Menu (Ctrl-f1), along with the number of vertical lines displayed. Memory allocation for these modes is shown below.

Part two will include further details of the features of INTER-WORD and it's Menus, plus printing your documents out to paper.

PROGRAMMABLE FUNCTION KEYS

The usual BBC BASIC *KEY command can still be used whilst running INTER-WORD. Define them in the normal way from the Main Menu (where * commands are accessible), for example: *KEY0 INTER-WORD <Return>
To access this key definition press SHIFT, CTRL and f0 together. This definition will insert INTER-WORD into your document at the cursor.

MEMORY ALLOCATION

40 or 53 columns	25 lines:	8k is used
40 or 53 columns	32 lines:	10k is used
80 or 106 columns	25 lines:	16k is used
80 or 106 columns	32 lines:	20k is used

INTER-WORD key commands

MENUS AND FUNCTION KEYS

Ctrl F0 Status
Ctrl F1 Preferences
Ctrl F2 Marked Sections
Ctrl F3 Search & Replace
Ctrl F4 Page Layout
Ctrl F5 Printer Setup
Ctrl F6 Control Codes
Ctrl F7 Multi-File
Ctrl F8 Spelling Check†
Ctrl F9 ROM Link
F0 Status Menu
F1 Embedded commands
F2 Insert Ruler
F3 Insert Marker
F4 Align text left
Shift F4 Underline
F5 Centre text
Shift F5 Bold
F6 Align Right
Shift F6 Dotted
F7 Justify text
Shift F7 Normal
F8 Delete marked section
F9 Copy marked section
F9 F8 Move marked section

No single command is available to move a marked section of text, but by marking a section, moving to the new position and using Copy (f9), then Delete (f8), this is the closest equivalent.

† Only if you have a ROM-LINK spelling checker installed in your BBC as well as INTER-WORD.

CURSOR MOVEMENT WITHIN A DOCUMENT

← →
↑ ↓ Move the cursor around
Ctrl → Move right one word
Ctrl ← Move left one word
Ctrl ↑ Move up one screen full
Ctrl ↓ Move down one screen full
Shift → Move right to end of text on cursor line
Shift ← Move left to end of text on cursor line
Shift ↑ Move up to beginning of text
Shift ↓ Move down to end of text
Ctrl P Move cursor to the same relative position on the previous page
Ctrl N Move cursor to the same relative position on the next page
Ctrl ^ Move cursor to the current ruler (nearest above)
DELETE Delete character to left of cursor
COPY Delete character to right of cursor
Ctrl A Delete character at cursor
Ctrl D Delete word at cursor
Ctrl F Re-start Search & Replace
Ctrl G 'Quick' search
Ctrl L Delete the line at cursor
Ctrl N Move to next page
Ctrl P Move to previous page
Ctrl Q Next 'quick' search
Ctrl R Remove Markers
Ctrl S Swap case
Ctrl X Mark all text
Ctrl Z Mark word at cursor

an introduction to
INTER-BASE

And finally, the last part of this comprehensive introduction to the INTER-BASE program, courtesy of Martin Pickering

Because of its comprehensive commands dealing with text strings and data files, IBPL can be used to write programs which will convert wordprocessor or database files, from a different type of computer, into a form which can be read and used on the BBC Micro (and vice-versa).

THE HISTORY

Inter-Base was finally released in August 1987 as version 1.0A. In the final desperate rush to get the package onto the market (more to appease impatient customers than for sound commercial reasons), the accompanying manual was short - far too short. The original intention was to produce a four hundred page manual covering database philosophies, a programming tutorial and a complete command reference. However, after almost two years of well-intentioned delays while more and more features were added, it was a "now or never" decision which forced it to the marketplace with a manual of about one hundred pages.

The advantage of hindsight allows us to see this as a mistake. If only an extra couple of months had been spent in working on documentation, Inter-Base would have been better received and would ultimately have sold in greater numbers. However I think I would be correct in saying that to Computer Concepts the thought of a further delay at that stage of the project would have resulted in immediate termination; Inter-Base would never have seen the light of day.

At this stage, Inter-Base contained quite a few unintentional features!

(A feature is the polite term for "bug".)

Almost a year went by before these "features" were eliminated in version 1.10A. Unfortunately (or otherwise) the author was lent this pre-release version and discovered a couple of new "features". Finally, in August 1988, version 2.0A was released, together with a new Reference Manual with more than 250 pages of information. Of these, over 200 refer to programming. Still less than the originally intended volume of documentation but adequate for most users.

It is important that you have the latest significant release of the software; there's no point in wasting time on features which have already been ironed out. Computer Concepts are very good about upgrades. If you have a version of Inter-Base earlier than 2.0A then give them a call. They will tell you how to upgrade to the latest version, including manual, for only a small charge.

Although the 2.0A chip contains a number of revisions over 1.0A, most of these are associated with the card index program rather than IBPL. To find out which version you have in your computer type: `*HELP <RETURN>`

The text you have just read is an extract from a new book "The Inter-Base Programming Guide" written by Martin Pickering and available from the author at 10 Bollin Close, Sandbach, Cheshire. CW11 9TZ at a price of £14.95 inclusive.

The book does not replace the Reference Manual since it does not refer to the Card Index program. Instead, it concentrates on the programming language itself. IBPL is a very powerful language but simple to use and the Guide introduces it to the beginner through a series of short example programs. To reduce your typing a 5.25" disc containing the example programs is available for an additional £2 (post-free if ordered with the book). The disc is well worth having since it contains some lengthy programs which are not listed in the book. One of these - "RETRIEV" - will retrieve most records from a corrupted database!

Next issue...something else!

ADDOS *cont...*

available in the Public Domain. Acorn have kindly given their permission for this modified version of their system to be made generally available.

In order to make changes to the DFS we shall need a copy on which to work. Those with knowledge of machine code will have no trouble in obtaining a copy of the DFS in the Master's ROM number 9; it should be named ORIGDFS. Others wanting to try ADDOS may run the following Basic program. It will make a copy for you. Do note that it is for the BBC Master. I understand the B+ and some other systems also use the ADFS. You are on your own with those. What is described here, and subsequently, was written for and runs on, the Master.

PROGRAM 1 - COPYING THE DFS.

```
10 K%=&3000:A%=0:X%=0:Y%=9
20 FOR J%=&80 TO &C0:?&F7=J%
30 FOR I%=&00 TO &FF:?&F6=I%
40 K%?I%=USR(&FFB9)
50 NEXT:K%=K%+&100:NEXT
60 *SAVE ORIGDFS 3000 +4000
```

I should also state at this stage that there is no hardware hacking required. The ADDOS filing system is simply a software program which may be set into the sideways Ram. It may be put on to a Rom if you wish to have this DFS permanently available but it is not necessary.

For anyone thinking of trying ADDOS on systems other than the Master, I should point out that I have made use of the extra assembler instructions available in the 65C12 version of the processor. It may well be possible to rewrite the code to avoid those instructions but I found it convenient to use them.

Now armed with a copy of the Acorn DFS, obtained by running PROGRAM 1 or otherwise, we can now start modifying the file to produce the new double density filing system ADDOS. The alterations are given in the form of a few lines of BASIC code followed by a discussion of what they do and so on through the program.

PROGRAM 2 - DFS TO ADDOS CONVERSION

```
10 *LOAD ORIGDFS 3000
```

Get the copy of Acorn's DFS into memory in order to overwrite sections of it.

```
20 REM Change titles
30 $&3008=".ADDOS.V4"
40 ?&3008=&92:?&300E=0
50 ?&3011=0
60 $&512F="ADDOS V4"
```

The above lines change the name strings within the file to make ADDOS distinguishable from the single density DFS system.

```
70 $&34C0="DD":!&4B5A=&534F4444
80 !&5240=&375F3020:!&5244=&3E
90 !&5246=0
100 !&524A=&0880:?&524E=0
110 :
```

The above changes the FM which appears after the directory disc title. FM is the bit writing system used for single density. This is changed into DD (for double density), to give a difference between the single and double density directory displays. It also changes the drive count and titling shown on the DRIVE command of *HELP DFS.

```
120 REM Change sectors/trk count
130 ?&31D5=18:?&4CC8=18
140 ?&57B1=18:?&66A0=18
150 ?&3C86=18:?&5799=18
160 :
```

The single density system uses 10 sectors per track. Wherever the sector count is used within the DFS we must change this to 18 to handle our 18 double density sectors per track.

The second part of this article will be in Issue Six of ByteBack

in black and white (and colour)

printers part 2

Continuing from last month, a basic guide to choosing and using a low-cost printer

Last Issue, I covered the basic types of printer that there are and the two ways in which they can be connected to your Beeb. By far the most common type of printer in use with computers like the BBC is the 9-pin dot matrix type. Starting at around £30.00 for a second-hand bargain, to £150.00 for top-of-the-range colour capacity, these machines appear to be the best buy if your main use is 'personal' letters, program listings, or rough pictures.

When looking for a printer of this type, it's useful to consider 'Epson compatibility'. Basically, when Epson started building printers, their printer codes quickly becomes the standard for the industry and many other manufacturers built their printers either with their own codes and Epsons codes, or Epsons codes alone. It's very difficult to find a piece of software that supports a printer but doesn't support Epson compatibility! Earlier Epson printers include the LX, RX, FX range and the new LQ-100 (more about this one in a mo). Other printers to watch our for are offerings from Panasonic (KX range for example) and Star printers, namely their LC range of machines.

All printers come with more than one 'face' or text style, the number of them depends on the machine, but typically you will find a standard 'draft' style (one, very quick pass of the print head that gives the fastest but crudest printing - useful for program listings etc), and one NLQ (Near Letter Quality) style. On top of this, your printer, particularly if it is reasonably new, will contain 3+ alternative NLQ faces, perhaps one which is all capitals, one which is scripty, one that is a Serif face (where the corners of the letters have little bits on them, this text here is a serif face) and then further variations on these themes. From printer to printer, the style of each face differs, even from 'draft' on one machine to 'draft' on another. It is important to view the various faces when purchasing a printer to pick the ones that you prefer and would find most useful for the work you will use the printer for.

As well as the standard display faces, most printers have the facility to do special things with the text styles, such as underline, bold, italic, double strike, double height, double width. This is where the printer codes come in. From your particular word-processor, you should have the facility to send codes to the printer. By observing the printers user manual (it's important to make sure you get the manual with the printer if you are buying second-hand otherwise you can't be sure what codes the printer needs to invoke the various features!) you will discover the particular codes you need and can 'embed' them within your document. Check with your particular wp program to find out how it is done. Next issue I'll cover some information on printing from INTER-WORD word processor.

Now, there is also the paper handling of the printer to consider. Virtually all printers are now designed to print on A4 pages (210mm x 297mm) which is typically called 80-column mode. A few printers have a 'wide carriage' to print paper in 100 columns or more, useful for spreadsheets or anything requiring the extra width on the page. It's important to find out whether your printer will support a sheet feeder if you don't like hand-feeding single sheets of paper. A sheet feeder will hold a number of sheets of paper in place ready to print. Many printers do have the option to fit one and they typically hold 50 to 200 sheets. You can put coloured paper, and a variety of different qualities or styles of paper like wove or laid (slightly textured writing paper, normally with a water-mark) and with this, produce decent looking letters and documents.

printers part 2 *cont...*

The other kind of paper you might want to use is fanfold paper, the type that has the perforated strips down each side with sprocket holes, and each page is perforated-ly(?!) connected to the next page, if you will (a little like toilet paper really, except for the sprocket holes and the number of sheets. And the size. And the use.) Although fanfold paper is not normally used for letters (I advise strongly against using this paper for anything where impression is important, ie a CV or job application!), it is quite useful for general letter writing and program listing because each page is held to the next and if you don't have a single-sheet feeder this is a convenient way to have the sheets fed automatically. Not all printers come with tractor feed capacity (less so on newer machines, almost exclusively on earlier models), however some printers, like the Star LC200 comes with a tractor feed and single sheet holder (a molded piece of plastic that holds a single sheet of A4 paper). In fact, the majority of printers seem to come with a single-page holder only and tractor feed as an option.

Second to this is the 24-pin dot matrix, giving better quality text (nearer to professional quality lettering) and improved graphics capability. Whilst these printers do cost more than their 9-pin counterparts, the quality is usually very obvious when compared to older 9-pin machines but newer 9-pin models can produce great results. The important thing is to check the output of the printer before you spend your money. Make your decision based on what you see and not on manufacturer's blurb...

Right, enough technical details, how about the low-down on a few printers? I have personally used the Star LC200, the Epson LQ-100,a Brother 9-pin something-or-other, a Daisy-wheel-type, a Canon BJ-10 bubblejet (but not with the Beeb) and a laser printer (again, not with the Beeb). The laser we may as well discount right now: the quality is good, but let's face it, who would buy a laser to run from a BBC Micro?! The Canon, although not used with the Beeb, produces excellent quality lettering (almost laser quality) and does support Epson-compatibility, so should work well with the BBC (approx £200.00). The most likely candidates for the Beeb will be the dot-matrix variety of printer, 9-pin and 24-pin depending on budget.

STAR LC200

The Star LC200 is a 9-pin machine with excellent quality of output, that also supports colour, via a 4-colour ribbon. With the printer you get a plain black ribbon, the colour ribbon and the facility to support tractor feed paper and a single sheet holder too. With the colour ribbon you get about 8 colours, red, yellow, blue and a combination of these: green, orange, violet, and finally, black!

There are a number of faces built-in, including the usual draft and a rougher-looking, much faster printing draft for listings, etc. There is also a nice serif face, courier, a capital-letters only face, and a sans-serif face (one without the added fancy bits to the characters). You can also choose between 10 cps or 12 cps (characters per inch).

The printer also has auto-sheet feed, which means you drop the page into the sheet holder and press PARK: the paper is fed into the printer to the correct starting position and the printer goes ON-LINE ready to print - that's it! When the page has been printed, it normally feeds the page out for you. If not, pressing one button will do that for you. If you find that you are regularly using a certain typeface, and you have to set this up everytime you switch on, you can set this up as the default (along with other settings) so when you next switch on your favourite settings pop up instantly.

This printer is full of a variety of different options you can set and the output is great: when I started the company I now work at, I used this printer to produce the various quotations and letters. Good Stuff. Price is about £150.00 and should be more than adequate for most printing needs.

EPSON LQ-100

When I bought this printer, I expected a lot. First of all, it has the Epson badge, known for quality since the 5th Century, and it boasted numerous features for little less than £150.00, like 24-pin dot matrix quality, 50 page sheet feeder, scalable typefaces (anything from about 3mm high to 20 mm). Well, I should have trusted my instinct: you don't get all of this for so little money!

printers part 2 *cont...*

I bought it on the Saturday, set it up and was away in a very short time, only I wasn't. The paper kept feeding through at an angle (only slight, but enough to cause the composition to come out wonky). Then, the sheets of paper wouldn't feed out the other side of the printer, kept getting caught and creasing up. It was noisy whilst printing, even though it boasted "quiet printer" and all that.

Monday morning: the printer was returned to whence it came, never to be in this house again! *Now to a review of from someone who uses her printers daily: Sue Shawcross from Manchester...*

THE AMSTRAD DMP 3000
80 column 9-pin dot matrix printer

This is an excellent machine in (almost) Beeb beige colour. At first sight it doesn't seem physically very robust but has survived 5 years with me - including a number of house moves ! The ribbons are easy to obtain - 'compatible' ribbons are about £3.00.I usually have mine re-inked by Aladdink (see below for address). They are a bit gloopy at first but soon settle down. A good feature of the Amstrad DMP 3000 is its integral printer stand so that fanfold paper can be stored underneath. Also, because the paper feeds from the front of the machine and remains on the horizontal throughout its journey through the printer, its very easy to re-align the type with the head for text additions, corrections etc. My Amstrad machine has had to have its head replaced once due to damaged caused by jammed paper when I left it unattended printing away madly. The moral of that story is don't leave a printer, that's crammed on to a small desk and using fanfold paper, to its own devices for too long !! I think the nice term for this is 'operator error' or more plainly stupid !!

Vital Statistics :

Stated in the manual: 106 characters per second - draft mode 26 characters per second - NLQ mode. Accessed by the ByteBack test - based on 10 runs of each program.
(Draft pica)
44 lines per minute
58.67 characters per second
400 sheets of fanfold paper per hour
Line feed speed = 0.196 lines per second
Head speed = 0.169 inches per second

THE JUKI 6000
daisywheel printer

This again has served me well. It's a very neat, compact, two-tone grey machine - about the size of an electric typewriter without the keyboard. It uses Triumph Alder daisywheels and Olivetti Praxis typewriter ribbons. These two are the main problem with the machine. First, the daisywheels: the documentation with the printer shows that a number of type styles are available on various daisies - that's fine if you can actually get hold of them. I managed to get one in a Manchester stationers' sale ! Mind you, the first one's still going strong. The ribbons are also a pain to get hold of. I've alleviated the problem slightly by having the fabric ribbons re-inked by Aladdink. The re-inking process seems to be more suited to these ribbons; they are spot-on from the start. Don't be fooled into thinking that Juki 6100 ribbons and daisies will fit the Juki 6000 - they don't. I bought 25 6100 daisies 'on spec' that they'd fit and had to re-sell them - you have been warned.

Vital Statistics *as stated in the manual (Courier 10 daisywheel) 10 characters per second. Accessed by the ByteBack test - not available since this printer requires line feed commands.*

SUMMARY

Both of these printers have proved to be excellent 'work horses' having survived the rigours of printing a number of drafts of my 360-odd A4 page Ph.D. thesis. This 1988 vintage masterpiece (ha! ha! ha!) was written in InterWord - yes, you PC & Mac users can laugh all you like, it worked well - so there !

Both printers have been in almost daily use ever since. For day to day use I would thoroughly recommend them both even with Juki's queer ribbons & daisies! Am I allowed to call them 'queer' in print ??

Alladink, Eyemouth, Berwickshire, TD14 5EY. Telephone : 08907 50965

N.B. they do refills for laser printers & bubblejets & ribbon colours other than black.

I'll be giving more reviews in the next issue, questions will be answered if you have any, drop me a line!

CLASSIC GAMES

By Mark Lester

In January of this year my grandmother broke her hip. The result of this was that I dug up my Beeb which I hadn't used for many years; it re-ignited my interest in Beeb games. Sonic the Hedgehog may be great but it's not EXCITING! The upshot of all this is is that I am writing some reviews comparing different variations of the same classic games. I'm starting with Space Invaders.

You are defending the Earth against hordes of alien invaders which are coming down to destroy you, firing bombs as they descend. You can shoot at them from the bottom of the screen with your laser. Destroy a whole wave and another more aggressive wave will come at you until you're ship is hit or the aliens reach the Earth. You may defend yourself by sheltering beneath 4 shields although they gradually crumble in the face of the alien missiles. Extra points are earned by hitting spaceships which periodically drift across the top of the screen. You have only three lives.

The game first appeared in arcades in 1979 and was the point at which computer games really took off. Acornsoft produced 2 versions. The first was **Space Invaders** written mostly in M/C in 1981 for the BBC model A in MODE 7. It was a very creditable version and a close approximation to the original. The game takes place mostly in black and white though the aliens turn green when they get near the bottom of the screen; the original was completely in black and white with the green effect produced by a piece of green acetate stuck on the screen. Hi tech or what? The game had 9 skill levels and in spite of the crude chunky graphics and sound it deserves a good **7/10**.

The second version **Super Invaders** was smoother with superior (full colour) graphics and sound. It gives you three options: "a mild encounter" is the normal game with no unusual features, "an uncomfortable experience" is harder as the width of the screen gets narrower and narrower giving you less time. In "a terrifying experience" you have the additional problem of the alien bombs homing in on you. This level is virtually impossible; not for beginners! Score **9/10**

Superior Software managed an impressive offering with **Space Invaders**. This game offered the best graphics of all of them with particularly smooth movements. The way the defenses crumbled was especially good compared to the original. This version featured spaceships which fired devastating bombs usually directly over you. Absent however were any options or skill levels and for this reason I am awarding it **8/10**.

Bug Byte's **Space Invaders** had the options of joysticks/keyboard, "pro" or "amateur" and 1 or 2 players. It featured good smooth colourful graphics but suffered from being too damn slow even on the harder level and poor sound and so did not hold my attention. Score **3/10**

A feeble version was offered by The Micro User: **Alien Invasion.** Written in BASIC the graphics and sound were poor and the movements jerky. **1/10**

More classic games reviews in ByteBack soon...!

CLASSIFIED ADS

◆ For Sale: 2 off Dot Matrix printers £20.00 each, Acorn Data Recorder £10.00, ADFS ROM £10.00, Econet module & ROM for Master £10.00, Edword w/p ROM £5.00, BBC User Guide £3.00, Clares Replica £3.00, 7 off popular BBC games on tape £1.00 each. **Contact Colin: 0738-812186**

◆ Wanted: a ROM cartridge and/or Sideways RAM/ROM card for the BBC Master. **Contact Colin:0738-812186**

◆ Wanted: User Guide, any books, etc for the BBC Master, also any documentation for using British Telecom printer MP 182. Any software geared to graphics, artwork, lightpen or word-processing. Please let me know price, or I have for sale/swap Acorn amber screen monitor, Merlin business system (no leads) and quite a few original games on cassette: list on request. Offers please. **Contact Jim Burnette: 9 Cranbrook Road, Winton, Eccles, Lancs. M30 8DU**

◆ Wanted: Information on how to use the various sideways ROMs: Sleuth, Spy2, Xtend, Accelerator, Scribe, Terminal, Exmon, Pascal 1, Microscope, Forth, Toolkit & AMX mouse. Also, anyone got a word processor on ROM please, not to expensive? **Contact Melvyn Phillips, 60 Walter Scott Road, Bedworth, Wark's CV12 9HD**

SUPPLIERS & SUPPORT

- **Adventure Soft Ltd** - PO Box 786, Sutton Coldfield, West Midlands, B74 4HG - 021 352 0847
- **Rickitt Educational Software** - 0460 57152
- **Pres Ltd** - PO Box 319, Lightwater, Surrey GU18 5PW - 0276 472046
- **Software Bargains & Mercury Games** - C/O Northwood House, North Street, Leeds LS7 2AA - 0532 436300
- **Watford Electronics** - 0582 487777
- **BBC PD** - 18 Carlton Close, Blackrod, Bolton, BL6 5DL
- **Headfirst PD** - 97 Chester Road, Southport, PR9 7HH
- **Mad Rabbit PD** - Joel Rowbottom, PO BOX 4, Crigglestone, Wakefield, West Yorkshire WF4 3XE
- **JJF PD** - James Farmer, 49 Hollyberry Close, Winyates Green, Redditch, Worcs. B98 0QT

OTHER BBC USER GROUPS

- **SOLINET** - *Disc based magazine packed full of useful BBC items:* Ron Marshal, 41 Westbrook Drive, Rainworth, Mansfield, Nottingham NG21 0FB
- **EIGHT BIT SOFTWARE** - *A good source of BBC information and PD software via a disc based magazine for enthusiasts:* Chris Richardson, 8BS, 17 Lambert Park Road, Hedon, Hull HU12 8HF

A NEW DISC BASED FANZINE IS SOON TO START UP. DETAILS TO FOLLOW...

Please send any correspondence (always welcome) to Paul Harvey, ByteBack, 33 King Henry's Mews. Enfield Lock, Middlesex EN3 6JS.

THE NOTICEBOARD

BYTEBACK ISSUE SIX -

✓ More on Printers
✓ Further information on using the INTERWORD word processor

COMING SOON: The different BBC Models

BYE BYE BEEBUG

BEEBUG – the long-running, only commercial BBC magazine still remaining – is to step down, finally, in a couple of months. It began as an independent publication back when the BBC was but a mere twinkling in Acorn's eye. Very quickly it grew to over 5,000 members after only 2 issues! After 11 full years of publication, BEEBUG finally bites the dust with the April 1994 issue. It is rumoured that an individual body may pick up the existing member-database and continue an alternative publication for the BBC Micro family but as yet there are no finite details. In a forthcoming final issue, there will be an article on user groups still supporting the BBC, with a mention of yours truly! I hope that it generates further interest and input to these pages.

THE SMALL PRINT

ByteBack is a completely independent publication, not associated with, tied to, or supported by another group, company or individual. It is a monthly (when possible) magazine that is intended to help, encourage and bring together users of the BBC Micro. It is not a profit making venture: driven by enthusiasm and support from it's readers, it springs into existence every four-six weeks or so, hopefully providing an interesting read for half an hour or so. Every effort is made to ensure that the content of ByteBack is 101% accurate. Any errors or omissions found within it's covers should be brought to my attention... then forgotten... Alternatively, they can be ignored.

SUBSCRIPTIONS

My aim is to produce an issue of ByteBack once a month. It won't always happen (due to the rest of my life getting in the way), so we'll just see what happens. The subscription will remain at £1.00 a copy (including postage), and you can subscribe to as many or as few copies as you like, up to 12 copies maximum. No need to return any forms, just pop a cheque in the post (payable to **P.Harvey** please, ***not*** ByteBack!), along with a note explaining which copies you require and I'll make sure you get them in tippy-top condition! BB

the back page

tips tips tips

Check this lot out! Got any of your own?

It's quite common when programming in BASIC to leave the THEN from the IF...THEN statement, as in

```
IF a=27 THEN PROCup
```

becomes

```
IF a=27 PROCup
```

However, there are a number of times when the `THEN` must not be left out of the `IF...THEN` condition particularly when using psuedo variables such as `LOMEM, HIMEM, PAGE` etc.

```
IF PAGE<>&E00 THEN PAGE=&E00
```

should not be shortened to

```
IF PAGE<>&E00 PAGE=&E00
```

These psuedo variables are given a different token value dependent on whether they are on the left or the right of the `THEN`. An alternative is to replace the `THEN` with a colon (:), as in

```
IF PAGE<>&E00:PAGE=&E00
```

This rule also applies to 'star ' (*) commands.

```
VDU 23,0,10,x,0,0,0,0,0,0
```

will produce a flashing cursor of varying sizes dependent of the value of x: if `x=0` the cursor will be at it's largest. If `x=10` the cursor will disappear altogether.

Has anyone with ADFS noticed this little curio? With DFS, the command `*TITLE "Disc title"` is used to give the disc a title. On the ADFS however,

```
*TITLE "Disc title"
*TITLE    "Disc title
*TITLE Disc title
```

All produce the desired result, whereas `*TITLE"Disc title"` (omitting the space between the command and the first quote) causes the first word of the title to become upper case!

There is a way for a program to know which model of BBC it is running on. The command `INKEY-256` produces a different value for the different machines and the different machine operating systems. The values are as follows:

Hex	Dec	Machine	MOS
&00	0	BBC	0.10
&01	1	Electron	1.00
&FF	-1	BBC	1.00 or 1.20
&FE	254	BBC	1.00 or 1.10 USA
&FD	253	BBC Master 128	3.20
&FC	252	BBC	1.2 W.Germany
&FB	251	BBC B+	2.00
&FA	250	ABC*	
&F5	245	Master Compact	5.10
&F4	244	Master 128	3.26
&A0	160	Archimedes Arthur	1.20
&A1	161	Archimedes RISC OS	

*ABC Acorn Business Computer

When asking for input from a user in your own programs, it's often important to have the data as lower case or upper case exclusively. Using `*FX202,x` it is possible to set the Caps Lock and Shift Lock settings prior to getting the input.

x	Caps Lock	Shift Lock	Shift Enable
0	✓	✓	×
16	×	✓	×
32	✓	×	×
48	×	×	×
64	✓	✓	✓
128	×	✓	✓
144	✓	×	✓
160	×	×	✓

You will see the changes when you make them by observing the Caps Lock and Shift Lock lights on the left of the keyboard. However please note that setting Caps Lock with `*FX202` does not stop the user from releasing it by pressing the Caps Lock key themselves!